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175

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

WASHINGTON, D. C.

DIRECTIONS FOR DESTROYING POCKET GOPHERS

Pocket gophers are readily caught in several makes of special traps commonly on the market, and a few of these suffice to keep small areas free of these pests. For ridding alfalfa fields, orchards, and long stretches of ditch embankments of them, a very successful and much more practical method is to poison them by placing baits of sweet potato or of parsnips in their underground runways.

The baits should be cut about an inch long and a half inch square, and washed and drained. From a pepper box slowly sift 1/8 ounce of powdered strychnine (alkaloid) and 1/10 of this quantity of saccharine (ground together in a mortar) over about four quarts of the dampened baits, stirring to distribute the poison evenly.

The runways, which are usually 4 to 8 inches beneath the surface, can be located by means of a probe made of any strong handle an inch in diameter and 36 inches long. One end should be bluntly pointed. Into the other should be fitted a piece of 3/8 inch iron rod, protruding about 12 inches, and bluntly pointed. A foot rest aids in probing in hard soils. By forcing down this iron rod near gopher workings, or a foot or two back of fresh mounds, the open tunnel can be felt as the point breaks into it. The blunt end of the instrument is now used to carefully enlarge the hole, a bait or two is dropped into the run and the probe hole closed.

One soon becomes expert in locating the runs, and a man can treat 300 to 500 gopher workings in a day. Baits need be placed at only two points in each separate system of 10 or 30 mounds, which is usually the home of a single gopher. In our experience baits placed fairly in the open runs have invariably killed the gophers. The method has found great favor wherever it has been introduced.

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The baits should be cut about 1 inch long and $\frac{1}{2}$ inch square, and washed and drained. From a pepper box slowly sift $\frac{1}{2}$ ounce of powdered strychnine (alkaloid) and 1/10 of this quantity of saccharine (ground together in a mortar) over about 4 quarts of the dampened baits, stirring to distribute the poison evenly.

The runways, which are usually 4 to 8 inches beneath the surface, can be located by means of a probe made of any strong handle an inch in diameter and 36 inches long. One end should be bluntly pointed. Into the other should be fitted a piece of $\frac{3}{8}$ -inch iron rod, protuding about 12 inches, and bluntly pointed. A foot rest aids in probing in hard soils. By forcing down the iron rod near gopher workings, or a foot or two back of fresh mounds, the open tunnel can be felt as the point breaks into it. The blunt end of the instrument is then used carefully to enlarge the hole, a bait or two is dropped into the run, and the probe hole closed.

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C A U T I O N .

All poison containers and all utensils used in the preparation of poisons should be kept PLAINLY LABELED and OUT OF REACH of children, irresponsible persons, and live stock.

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DIRECTIONS FOR POISONING POCKET GOPHERS

Pocket gophers are readily caught in any one of several makes of special traps commonly on the market, and a few of these suffice to keep small areas free of the pests. For ridding alfalfa fields, orchards, and long stretches of ditch embankments of them, a very successful and much more practical method is to poison them by use of baits of vegetables, or by using poisoned grain. Either the vegetable or the grain bait gives splendid results, but about one pocket gopher out of ten will not eat a poisoned bait, and these individuals must be trapped.

The following formulas for preparing poisoned baits have been developed by the Biological Survey and have been found very effective:

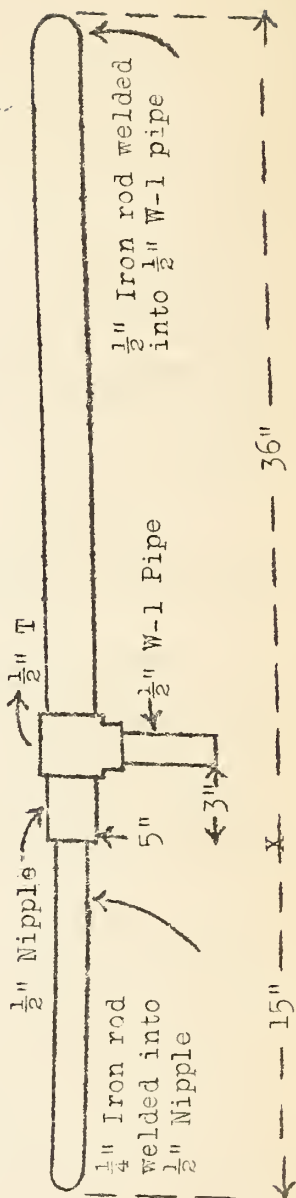
Vegetable baits.--Cut carrots, sweet potatoes, or parsnips about 2 inches long and $1/2$ inch square, and wash and drain. From a pepper box, slowly sift $1/8$ ounce of powdered strychnine (alkaloid) and $1/10$ ounce of saccharin (ground together in a mortar) over about 4 quarts of the dampened baits, stirring to distribute the poison evenly.

Grain baits.--Dissolve 1 heaping tablespoonful of dry gloss starch in a little cold water and add to $3/4$ pint of hot water. Boil, stirring constantly until a thin clear paste is formed. Mix together 1 ounce strychnine (alkaloid) powdered and 1 ounce baking soda, sift into the hot starch paste, and stir thoroughly to a smooth creamy mass. Add $1/4$ pint corn syrup, 1 tablespoonful glycerine, and $1/10$ ounce saccharin and stir well. Pour this mixture over 13 quarts of oats, rolled barley, milo, or feterita and mix thoroughly so

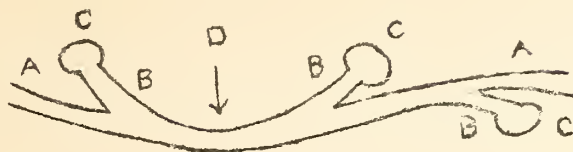
that each grain is evenly coated. Allow to dry before using. (It is important that only the best grade of thoroughly clean grain be used, as chaff absorbs and wastes much valuable strychnine, and poisoned weed-seeds imperil useful bird life.)

The runways, which are usually 4 to 8 inches beneath the surface, can be located by means of a probe made of any strong handle 1 inch in diameter and 36 inches long. One end should be bluntly pointed. Into the other end should be fitted a piece of 1/4-inch iron rod, protruding about 15 inches, and bluntly pointed. A foot rest aids in probing hard soils. By forcing down the iron rod near pocket gopher workings, or a foot or two back of fresh mounds, the open tunnel can be felt as the point breaks into it. The blunt end of the instrument is then used carefully to enlarge the hole, and a vegetable bait or two, or a tablespoonful of grain bait, is dropped into the run, and the probe hole closed.

If a shovel is used instead of a probe to locate the runways, care should be taken not to disturb the runway more than necessary. Close the hole made so as to keep out the light, taking care that loose dirt does not fall upon the baits placed in the runway.



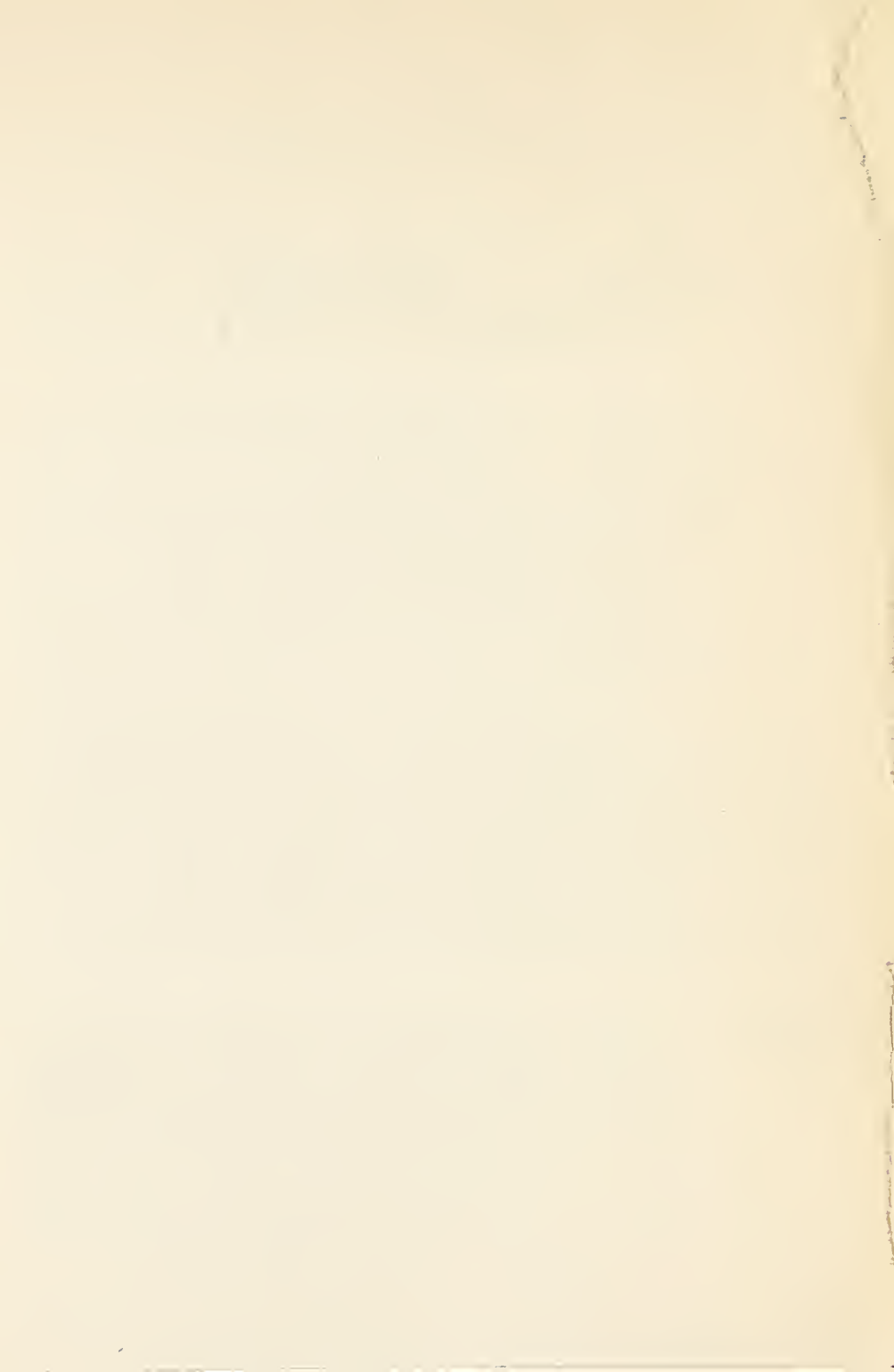
Following is a diagram of a portion of a pocket gopher's working, showing where to place the bait:



- A.--The main runway where the poison should be placed.
- B.--The laterals where it should NOT be placed.
- C.--The mounds made by the pocket gopher, usually indicating the direction of the lateral.
The lateral should be followed by means of the probe till the main runway is found.
The lateral may vary from 6 inches to 4 feet in length.
- D.--Point where probe is used and bait dropped.

One soon becomes expert in locating the runs, and a man can treat 300 to 500 pocket gopher workings in a day. Baits need be placed only at two points in each separate system of 10 to 30 mounds, which is usually the home of a single pocket gopher. Experience has shown that baits placed fairly in the open runs usually kill the animals. This method has found great favor wherever introduced.

CAUTION: All poison containers and all utensils used in the preparation of poisons should be kept PLAINLY LABELED and OUT OF REACH of children, irresponsible persons, and livestock.



RODENT ERADICATION CAMPAIGNS

Biological Survey, U. S. Department of Agriculture
and State College of Washington Cooperating

POISONING POCKET GOPHERS IN WASHINGTON

The best bait thus far discovered for poisoning pocket gophers consists of sections of sweet potato, parsnip, or carrot treated with powdered strychnine, preferably the alkaloid form. The vegetables used should be cut into pieces about as thick as one's little finger and approximately an inch long. It is best to mix the strychnine with about one-tenth its bulk of saccharine in order partially to disguise the bitter taste of the poison. The mixture may then be put into a salt shaker and dusted over the bait while the pieces are still fresh and moist. One-eighth of an ounce of strychnine is sufficient for three to four quarts of the bait. Stir the pieces about in a pan while dusting on the poison.

In putting out the bait, entrance into the gopher burrow may be effected by the use of a sharpened prod about an inch in diameter. One that is made of a broom handle with a piece of three-eighths inch iron rod fitted into the larger end and projecting about twelve inches will give good satisfaction in ordinary soils. Both the rod and handle should be bluntly pointed. The former is used as a seeker, the latter for enlarging the opening where poisoned bait is to be put into the runway. This can be found by prodding the soil in a line between two adjacent mounds, or, if the pile has been freshly thrown up, by pushing the dirt aside with the foot and locating the lightly plugged lateral leading into the runway.

After putting two or three pieces of bait well down or back into the burrow, close the opening with a clod or other obstruction. It is a good plan to obliterate all pocket gopher hills with a hand rake or drag of some sort a few days after putting out the poison so that if any of the animals have escaped, the new mounds they construct can be readily detected.

C A U T I O N

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RODENT CONTROL CAMPAIGNS

Biological Survey, U. S. Department of Agriculture
and State College of Washington Cooperating

POISONING POCKET GOPHERS (Washington District)

The best bait thus far discovered for poisoning pocket gophers consists of sections of sweet potato, parsnip, or carrot treated with powdered strychnine, preferably the alkaloid form. The vegetables used should be cut into pieces about as thick as one's little finger and approximately an inch long. It is best to mix the strychnine with about one-tenth its bulk of saccharine in order to disguise partially the bitter taste of the poison. The mixture may then be put in a salt shaker and dusted over the bait while the pieces are still fresh and moist. One-eighth of an ounce of strychnine is sufficient for three to four quarts of the bait. Stir the pieces about in a pan while dusting on the poison.

In putting out the bait, entrance to the burrow may be effected by use of a prod about an inch in diameter, with one end bluntly pointed. The prod should be 4 feet long, with handle grips, and a short foot rest 14 inches from the blunt point. Prod the earth in a line between two adjacent mounds, or if a pile has been freshly thrown up, locate the burrow near the lightly-plugged lateral indicated by the fan-shaped mound. A little practice will enable one to "feel" the prod strike the open runway.

After putting two or three pieces of bait well down or back into the burrow, close the opening with a clod or convenient plug. It is a good plan to level the pocket-gopher mounds after the poisoning. If any pocket gophers have escaped, new mounds can be seen at the second treatment.

The proper season for poisoning is in the fall after crops are harvested and the animals active. Spring poisoning is recommended for retreatment, before plant growth hides the activity of the animals.

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